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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,427	01/02/2002	Guenther Heinz	B01-085A	7207

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THE GATES CORPORATION
IP LAW DEPT. 10-A3
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EXAMINER	
KRUER, STEFAN	
ART UNIT	PAPER NUMBER
3654	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/037,427	HEINZ ET AL.	
	Examiner	Art Unit	
	Stefan Kruer	3654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 31, 33 - 38 and 43 - 45* is/are pending in the application.

4a) Of the above claim(s) *27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26, 28- 31, 33 - 38 and 43 - 45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 March 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4, 6, 13, 16, 28, 31 and 43 - 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Winninger et al (US 6,033,331) in view of Conrad (3,980,174).

Winninger et al disclose:

- an elastomeric body (21, Fig. 1) having a width w and a thickness t and having a pulley-engaging surface;
- the elastomeric body having an aspect ratio w/t that is greater than 1;
- a tensile cord (20) contained within the elastomeric body and extending longitudinally;
- the pulley-engaging surface having a ribbed profile extending longitudinally along the elastomeric body (Fig. 6); and
- a ribbed profile having a rib (23) depicted as having an angle of approx. 90°;
- a plurality of ribs (23);
- a plurality of tensile cords (20);
- at least one pulley (61) having a ribbed profile (62) engaged with the pulley engaging surface;
- wherein the rib angle is depicted in the range of approximately 60° to 120°;

however, though Winninger et al depict their rib having an angle of approximately 90°, Winninger et al are otherwise silent with respect to an angle of their rib while referencing norms and dimensional designations in accordance to ISO 9981, for which a rib angle of 40° is of consideration (2nd Ed., Table 1).

Attention is directed to Conrad who teaches a of a rib (42, Fig. 2) having a 90° angle (supplement to 2 x 48, Fig. 4) for the features of maintaining belt alignment and enhancing frictional contact (Col. 2, L. 7 and Col. 3, L. 50), in keeping with the instant invention (Para. 0024 - 0026)

It would have been obvious to one having ordinary skill in the art to modify the reference of Winninger et al with the teaching of Conrad to provide a rib having a rib angle of 90° for enhanced power transfer and runnability for benefits of reduced operating costs.

Claims 2, 5, 14, **17 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Conrad, as applied to Claims 1, 13, 16 and 28, respectively, and in further view of Adifon et al (WO 99/43598).

Re: Claim 2, Winninger et al disclose their tensile cord (20) comprising non-conductive material (Col. 3, L. 49). Conrad is silent with respect to a tensile cord.

Attention is directed to Adifon et al who teach their tensile cord (726) comprising a conductive material, as inherent to fibers of "…high-carbon steel…" (Pg 7, Line 15).

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teaching of Adifon et al for the benefit of strength and resilience to high temperature, the latter for safety.

Re: Claims 5 and 17, Winninger et al and Conrad disclose their respective belt as having no end.

Attention is directed to Adifon et al who teach their belt (16) as having an end for the suspension and traction of their elevator car (12) and counterweight.

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teaching of Adifon et al for the benefit of utility in suspending and moving elevator components.

Re: Claims 14 and 29, Winninger et al are silent with respect to their tensile cord having a conductive material having a resistance and Conrad is silent with respect to a tensile cord.

Adifon et al teach their tensile cord (726) comprising a conductive material having a resistance, as inherent to fibers of "…high-carbon steel…" (Pg 7, Line 15).

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teaching of Adifon et al to provide tensile cords of conductive material having a resistance, wherein such cords are of metallic material whereby a resistance to high temperature (e.g. fire) maintains strength for safety.

Claims 3, 15, 18 - 19, 21 – 22 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, Conrad and Adifon et al, as applied to Claims 2, 14 and 29, and in further view of Suhling (DE 3,934,654) and Siefert (US 3,662,596).

Re: Claims 3, 15 and 30, Winninger et al are silent with respect to their tensile cord having a conductive material and Conrad is silent with respect to a tensile cord.

Adifon et al teach a tensile cord comprising a conductive material having a resistance, wherein the resistance of the cord inherently varies through changes in loading, their tensile cord as such is not configured for indicating change in resistance.

Attention is directed to Suhling who teaches the incorporation of conductive tensile cords (12a – 12h, Fig. 2) in conventional flat- and toothed suspension belts (11) for the detection of breakage, whereby the integrity of the suspension belt is monitored for replacement; however, Suhling does not indicate a lifting load.

Further consideration is directed towards Siefert who teaches his apparatus for the measurement of "…tension or compression stresses in a metal tire cord embedded in rubberized material of a tire…" as a means to determine the tensile/compressive strains of "…reinforcing metal cords…" under different inflation, loading and operating conditions (Col. 1, Line 13).

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al, Conrad and Adifon et al with the teachings of Suhling and Siefert to provide a means to determine the lifting load of suspension belts by monitoring the tension cords for elongation in advance of failure, for purposes of maintenance, safety and optimization.

Re: Claim 18, Adifon et al disclose a plurality of tensile cords (726).

Re: Claims 21 and 22, Adifon et al disclose their cords "…formed from … a metallic material, such as thin, high-carbon steel…"

Claims 7 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, and Adifon et al, Suhling, Siefert, as applied to Claims 3 and 15, respectively, and in further view of White, Jr. et al (US 34,981,462).

Re: Claims 7 and 19, Winninger et al, Conrad, Adifon et al, Suhling and Siefert are silent with respect to a jacket on a surface opposite their pulley-engaging surface.

Attention is directed to White, Jr. et al who teach their jacket (30) on a surface opposite their pulley-engaging surface as known to the art (Col. 4, Line 20).

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to modify the invention of Winninger et al, Conrad, Adifon et al, Suhling and Siefert with the teaching of White, Jr. et al to provide a jacket on a surface opposite the pulley-engaging surface as known to the art.

Claims 8 – 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, Conrad, Adifon et al, Suhling and Siefert and White, Jr. et al, as applied to Claims 7 and 19, respectively, and in further view of Stork (US 3,948,113).

Re: Claims 8 and 20, Winninger et al, Conrad, Adifon et al, Suhling and Siefert are silent regarding a jacket and, though White, Jr. et al disclose their jacket as well known in the art, they are silent with regard to its material of construction.

Stork, however, teaches his jacket (17,18, Fig. 2 and Col. 3, line 57) comprising "…rubberized woven fabric material such as … nylon..."

In that nylon is known to the art as an abrasion resistant material, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to modify the invention of Winninger et al, Conrad, Adifon et al, Suhling, Siefert and White, Jr. et al with the teaching of Stork to form the jacket of nylon for resistance to wear.

Re: Claims 9 and 10, Winninger et al disclose their tensile cord (20) comprising non-metallic material (Col. 3, L. 49). Conrad is silent with respect to a tensile cord.

Attention is directed to Adifon et al who teach their cords "…formed from … a metallic material, such as thin, high-carbon steel…" (Pg 7, Line 15) for strength and flexibility.

It would have been obvious to one of ordinary skill in the art at the time of the instant invention to modify the invention of Winninger et al and Conrad with the teaching of Adifon et al for the benefits of strength, flexibility and resilience to high temperature, the latter additionally for safety.

Claims 11 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Conrad, as applied to Claims 1 and 13, respectively, and in further view of Siefert.

Neither Winninger et al nor Conrad addresses a measurement of tensile cord loading.

Attention is directed to Siefert who teaches an electrical circuit (21, 22, 25, Fig. 1) connected to the tensile cord for measuring the stress-strain of metal cords, for various loading conditions. Conversely, based on the measured strains, the tensile loads can be calculated.

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teachings of Siefert to provide a means to determine the tensile cord load of suspension belts by measuring the stresses of said cords through electrical transducers (P/I), to provide instantaneous feedback for operational oversight and historical data.

Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Conrad, as applied to Claims 1 and 13, respectively, and in further view of Suhling.

Neither Winninger et al nor Conrad addresses a measurement of tensile cord failure.

Attention is directed to Suhling who teaches his tensile cords for the detection of breakage, including his electrical circuit (Fig. 1) for detection of such failure.

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teaching of Suhling to provide a means to monitor the failure of tension members for safety and maintenance.

Claims 25, 33 – 34 and 36 – 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al and Conrad, as applied to Claims 1, 13 and 33, respectively, and in further in view of Stork.

Re: Claims 25 and 33 – 34, Winninger et al and Conrad are silent regarding a fiber loading of their elastomeric bodies.

Attention is directed to Stork who teaches fiber loading in his elastomeric body to resist the formation of cracks (Col. 4, Line 8).

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teaching of Stork to extend fibers from the pulley-engaging surface to improve resistance to wear and failure.

With respect to **Claims 36 – 37**, Stork teaches, "…rubberized woven fabric material such as cotton, polyester or nylon or combinations thereof..." (Col. 3, Line 58) that forms his "partial tension section" as a "flexible resilient material".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Winninger et al and Conrad with the teaching of Stork to provide a matrix of fibers for the enhancement of tensile and torsional strength properties.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al in view of Conrad and Suhling and in further view of Siefert.

Winninger et al depict their belt having ribbed profile of approximately 90° to engage a pulley having a ribbed profile to enhance harmonic filtering and thereby service life, however Winninger et al reference ISO 9981 in which a rib angle of 40° is considered. Furthermore, Winninger et al are silent regarding the detection of a tensile cord load.

Conrad teaches a rib having a 90° angle for the features of maintaining belt alignment and enhanced frictional contact.

It would have been obvious to one having ordinary skill in the art to modify the reference of Winninger et al with the teaching of Conrad to provide a rib having a rib angle of 90° for enhanced power transfer and runnability.

However, Conrad is silent with respect to a tensile cord.

Attention is directed to Suhling who teaches an electric circuit for detecting a tensile cord failure and an interface to provide an alarm signal (audible or visual) and/or to automatically shutdown a hoist motor (Col. 4, line 38). Siefert teaches further his apparatus for measuring of the stress of reinforcing cords and his electrical circuit for indicating the stress under various operating conditions.

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al and Conrad with the teachings of Suhling and Siefert to promote power transfer and reduce wear, thereby reduction in operating costs, as well as to promote safety.

Claims 35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winninger et al, Conrad, Suhling and Siefert, as applied to Claim 26, and in further view of Stork.

Re: Claim 35, Winninger et al, Conrad, Suhling and Siefert are silent regarding a fiber loading in their elastomeric bodies.

Attention is directed to Stork who teaches such to resist the formation of cracks.

It would have been obvious to one of ordinary skill in the art to modify the invention of Winninger et al, Conrad, Suhling and Siefert with the teaching of Stork to inhibit the formation/propagation of cracks for enhanced service life and safety.

With respect to **Claim 38**, Stork teaches, "…rubberized woven fabric material such as cotton, polyester or nylon or combinations thereof..." (Col. 3, Line 58) that forms his "partial tension section" as a "flexible resilient material".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Winninger et al, Conrad, Suhling and Siefert with the teaching of Stork to provide a matrix of fibers for the enhancement of tensile and torsional strength properties for enhanced performance and service life.

Response to Arguments

Applicant's arguments filed 19 June 2008 have been fully considered but are moot in view of new grounds of rejection.

With respect to applicant's arguments that art associated with automotive belts is not relevant to the art of the instant invention, in that automotive belts are endless power transmission belts that operate at high speeds and relatively lower tension loads, whereas the belts used in elevator applications are of non-endless form and designed for relatively low transmission speeds and high loads, the technologies of automotive belt construction, power transmission (hence tension- and traction control) and runnability are nevertheless applicable to the art of the instant invention. Certainly, parameters such as tension and traction control, tension decay, drive (belt) alignment, etc. are applicable to the instant art; furthermore, in that the use of flat belts in the instant art is a later technology, one having ordinary skill in the art would consider developments and the expertise of related, pertinent art. Common vendors for belts of both or more arts are likely.

Additionally, though the transmission speeds in the instant art are lower than that of the related arts, undesirable phenomena such as vibration, noise and frictional wear are aspects of concern and addressed accordingly in the related art(s) as well.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Kruer whose telephone number is 571.272.5913. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Cuomo can be reached on 571.272.6856. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866.217.9197 (toll-free).

/Stefan Kruer/
Examiner, Art Unit 3654
13 August 2008
/Peter M. Cuomo/
Supervisory Patent Examiner, Art Unit 3654